Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended): An error correction coding method for use with an error correction coding apparatus, comprising the steps of:

subdividing data which includes data of a plurality of sectors~~, to produce subdivided data~~;

allocating the subdivided data in ~~an arrangement~~a plurality of arrangements of data;

coding each of said arrangements of data using a product code according to a code V and a code H and thereby generating a plurality of product-code codewords; and

outputting code-H codewords of each of said product-code codewords in a codeword-by-codeword manner in an alternating fashion for said plurality of product-code codewords~~, such that between data of the same sector of an outputted code-H codeword, there does not exist a data of another sector~~

wherein data of each sector lies on a plurality of said code-H codewords, and between the outputted data of each sector there does not exist data of another sector.

2 - 5. (Canceled)

6. (Currently amended): An error correction coding method for use with an error correction coding apparatus comprising steps of:

subdividing data which includes a plurality of identifier~~s~~ (IDs) data;

allocating the subdivided data in a plurality of arrangements of data;

coding each of said ~~subdivided~~ arrangements of data using a product code according to a code V and a code H ~~to generate~~thereby generating a plurality of product-code codewords; and

outputting code-H codewords of each of said product-code codewords in a codeword-by-codeword manner in an alternating fashion for said plurality of product-code codewords, ~~an order that each of said plurality of IDs exists at a predetermined interval in said outputted code-H codewords~~

wherein said ID data exists at a predetermined interval in the outputted data.

7. (Canceled)

8. (Currently amended): An error correction coding apparatus, comprising:

means for subdividing data which includes data of a plurality of sectors;

means for allocating said subdivided data ~~of said plurality of sectors in an~~ in a plurality of arrangements of data;

means for coding each of said arrangements of data using a product code according to a code V and a code H and thereby generating a plurality of product-code codewords; and

means for outputting code-H codewords of each of said product-code codewords in a codeword-by-codeword manner in an alternating fashion for said plurality of product-code codewords, ~~such that between data of the same sector, there does not exist data of another sector~~

wherein data of each sector lies on a plurality of said code-H codewords, and between the outputted data of each sector there does not exist data of another sector.

9 - 10. (Canceled)

11. (Currently amended): An error correction coding apparatus comprising:

means for subdividing data which includes a plurality of identifiers (IDs) data;

means for allocating the subdivided data in a plurality of arrangements of data;

means for coding each of said arrangements of data ~~subdivided data of said plurality of IDs~~ using a product code according to a code V and ~~A~~ a code H ~~to generate~~thereby generating a plurality of produce-code codewords; and

means outputting code-H codewords of each of said product-code codewords in a codeword-by-codeword manner in an alternating fashion for said plurality of product-code codewords, ~~an order that each of said plurality of identifiers exists at a predetermined interval in said code-H codewords outputted~~

wherein said ID data exists at a predetermined interval in the outputted data.

12 - 17. (Canceled)

18. (Currently amended): An error correction decoding method for use ~~in~~ with an error correction decoding apparatus comprising the steps of:

inputting data of code-H codewords ~~code words~~ with or without ~~an~~ error data, in an order such that data of each sector lies on a plurality of said code-H codewords, and between the outputted data of each sector there does not exist data of another sector~~among data of an input data sector of said code-H code words there do not exist data of sectors other than said sector~~;

allocating said inputted data of code-H codewords in an arrangement of a plurality of product-code codewords according to a code V and a code H in a codeword-by-codeword manner in an alternating fashion for said plurality of product-code codewords with or without ~~an~~ error data;

decoding said plurality of product-code codewords with said code V and said code H thereby to correct error data~~in said arrangement~~; and

providing data of said plurality of sectors from among said plurality of product-code codewords corrected.

19. (Currently amended): An error correction decoding method for use ~~in~~ with an error correction decoding apparatus comprising steps of:

inputting data of code-H codewords with or without ~~an~~ error data and including at a predetermined interval, a plurality of identifier (ID) data ~~a plurality of identifiers IDs existing at a predetermined interval in said code-H codewords~~;

allocating said inputted data of code-H codewords in an arrangement of a plurality of product-code codewords according to a code V and a code H in a codeword-by-codeword manner in an alternating fashion for said plurality of product-code codewords with or without ~~an~~ error data; ~~and~~

decoding said plurality of product-code codewords with said code V and said code H thereby to correct error data; and

providing data including said plurality of ID data from among said plurality of product-code codewords corrected~~within said arrangement~~.

20. (Currently amended): An error correction decoding apparatus[[,]] comprising:

means for inputting data of code-H codewords~~code words~~ with or without ~~an~~ error data in an order such that data of each sector lies on a plurality of said code-H codewords, and between the outputted data of each sector there does not exist data of another sector~~, among data of an input data sector of said code-H codewords there does not exists data of other sectors of a plurality of sectors than said sector~~;

means for allocating said inputted data of code-H codewords in an arrangement of a plurality of ~~product code words~~product-code codewords according to a code V and a code H in a codeword-by-codeword manner in an alternating fashion for said plurality of product-code codewords with or without ~~an~~ error data;

means for decoding said plurality of ~~product code words~~product-code codewords with said code V and said code H thereby to correct error data~~in said arrangement~~; and

means for providing data of said plurality of sectors from among said plurality of product-code codewords corrected.

21. (Currently amended): An error correction decoding apparatus, comprising:

means for inputting data of code-H codewords ~~code words~~ with or without ~~an~~ error data and including at a predetermined interval a plurality of ID data~~identifiers IDs existing at a predetermined interval in said code-H code words~~;

means for allocating said inputted data of code-H codewords in an arrangement of a plurality of product-code codewords according to a code V and a code H n a codeword-by-codeword manner in an alternating fashion for said plurality of product-code codewords with or without ~~an~~ error data; ~~and~~

means for decoding said plurality of ~~product code words~~product-code codewords with said code V and said code H thereby to correct error data; and

means for providing data including said plurality of ID data from among said plurality of product-code codewords corrected ~~within said arrangement~~.

22. (Currently amended): An error correction ~~de~~coding method according to claim 1, wherein the outputted data~~said code-H codewords~~ are stored in a storage.

23. (Currently amended): An error correction ~~de~~coding method according to claim 6, wherein said code-H code words are stored in a storage.

24. (Currently amended): An error correction ~~de~~coding apparatus according to claim 8, wherein the outputted data ~~said code-H code words~~ are stored in a storage.

25. (Currently amended): An error correction ~~de~~coding apparatus according to claim 11, wherein the outputted data ~~said code-H codewords~~ are stored in a storage.

26. (Currently amended): An error correction decoding method according to claim 18, wherein the inputted data are read from a storage ~~data read from said storage is inputted in said error correction decoding apparatus~~.

27. (Currently amended): An error correction decoding method according to claim 19, wherein the inputted data are read from a storage~~data read from said storage is inputted in said error correction decoding apparatus~~.

28. (Currently amended): An error correction decoding apparatus according to claim 20, wherein the inputted data are read from a storage~~data read from said storage is inputted in said error correction decoding apparatus~~.

29. (Currently amended): An error correction decoding apparatus according to claim 21, wherein the inputted data are read from a storage~~data read from said storage is inputted in said error correction decoding apparatus~~.